

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

CONDITIONAL MAJOR (DRAFT PERMIT) ID: F-06-074

BRIGGS & STRATTON CORPORATION

MURRAY, KY 42071

SEPTEMBER 26, 2007

RICK SHEWEKAH, REVIEWER

SOURCE ID: 21-035-00034

AGENCY INTEREST #: 504

ACTIVITY ID: APE20040001

SOURCE DESCRIPTION:

Briggs & Stratton manufactures small internal combustion gasoline engines and engine components (SIC 3519, NAICS 333618). Primary manufacturing activities include aluminum die-casting, ferrous and non-ferrous machining, painting, stamping, and engine assembly. Manufacturing activities have been running at the facility since 1984. The facility is comprised of one building that houses manufacturing, assembly, and office operations.

The permittee submitted a Title V operating permit application to the Division in June 2001. The permit application was updated and re-submitted on February 10, 2006. During review of this revised application, the permittee requested voluntary regulated pollutant emission limitations and the permit to be issued as a Conditional Major permit pursuant to 401 KAR 52:030. This permit is issued as the initial Conditional Major permit for the source.

COMMENTS:

The following table summarizes changes that have occurred since the issuance of previous permits, as specified by the applicant during this permit review. Additionally, on June 18, 2007 the permittee submitted a request to the Division for approval to install new equipment and change the fuel usage rate of unit E07 from 0.25 gal/hr to 1.0 gal/hr. The request has been reviewed and related requirements are included in this Conditional Major permit Number F06-047. New related emission units are also included in the table below.

Emission Points Listed Under Past Permits			Emission Points - Current Status		Explanation of Change
Permit	EP #	Emission Point Description	EP #	Emission Point Description	
O-88-067	01 (01)	Indirect heat exchanger, Cleaver Brooks, Model CB-700-350	B01 (S07)	Backup Boiler (14.65 MMBtu/hr)	EP # changed for consistency. The existing boiler will be used as a backup.
N/A		Indirect heat exchanger, Cleaver Brooks, Model Model CB-700-100 - 150		Primary Boiler (4.1 MMBtu/hr)	New. Requested June 18, 2007 to serve as the primary boiler.

Emission Points Listed Under Past Permits			Emission Points - Current Status		Explanation of Change
Permit	EP #	Emission Point Description	EP #	Emission Point Description	
S-99-010	12 (1)	Remelt Furnace	E01 (S01) 12 (1)	Remelt Furnace #1	Increase furnaces material processing rate from 1.655 tph to furnaces capacity of 7.5 tph, which is not a major modification since this is a minor (Conditional Major) source. Furnace #1 was replaced during this revision.
S-99-010	13 (1)	Remelt Furnace #2	E01 (S01) 13 (1)	Remelt Furnace #2	
C-91-195	38 (38)	Remelt Furnace	E01 (S01)		Removed
S-99-011	44 (1)	Natural gas fired Paint Cure Oven (3.5 mmBtu/hr heat input)	E03 (S03) 44 (1)	Natural gas fired Paint Cure Oven (3.5 mmBtu/hr heat input)	N/C*
S-99-011	47 (1)	Natural gas-fired #2 Prepaint Dryoff Oven (1.0 mmBtu/hr heat input)	E03 (S03) 47 (1)	Natural gas-fired #2 Prepaint Dryoff Oven (1.0 mmBtu/hr heat input)	N/C*
C-91-195	35 (35)	Epoxy Tank	E03 (S03) 35 (35)	Epoxy Tank Natural Gas Usage	Description has changed to be inclusive of all components of E03 (S03)
S-99-006	41 (1)	Infrared Oven	E03 (S03) 41 (1)	Infrared Oven	
C-91-195	23 (-)	Total Natural Gas Usage	E03 (S03)	Phosphate Washer Dryer	
				Cylinder Washer Dryer	
				Sump Washer Dryer	
				Carb Washer Dryer	
				Crank Washer Dryer	
				Cylinder Heat Treat Oven #1	
				Paint Oven	
				Thermal Deburr #1	
				Tank Top Washer Dryer	
				Tank Bottom Washer Dryer	
				#2 Dry Off Oven	
				Thermal Deburr #2	
				Cylinder Heat Treat Oven #2	
			E04 (S04) (22)	12,000 Gallon Aviation Fuel Tank	New – Installed 7/1/2003

Emission Points Listed Under Past Permits			Emission Points - Current Status		Explanation of Change
Permit	EP #	Emission Point Description	EP #	Emission Point Description	
S-99-011	46 (1)	#2 Engine Test Stand (Aviation Fuel)	E05(S05) 46 (1)	#2 Engine Test Stand (Aviation Fuel)	N/C*
			E05(S05) (16)	Engine Test Stand (Aviation Fuel)	Not listed in previous permits. Constructed: 4/08/1985
S-99-006	20 (1)	Omega Paint booth	E06(S06)20 (1)	Omega Paint booth	N/C*
S-99-006	21 (1)	Secondary Painting booth	E06(S06) 21 (1)	Secondary Painting booth	N/C*
S-99-011	42 (1)	#2 Secondary Spray Paint	E06(S06) 42 (1)	#2 Secondary Spray Paint	N/C*
S-99-011	43 (1)	#2 Omega Disc Spray	E06(S06) 43 (1)	#2 Omega Disc Spray	N/C*
S-99-006	40 (1)	Paint Booth for small parts	E06(S06) 40 (1)	Paint Booth for small parts	N/C*
			E07(S07) 46	Dyno/Reliability Testing Labs (Engine test)	New. Request letter dated August 14, 2006.
Insignificant activities					
C-91-195	06 (06)	Cleaning Coating	06 (06)	Cleaning Coating	N/C*
C-91-195	11 (11)	Engine Board	11 (11)	Engine Board	N/C*
C-91-195	31 (31)	Tank Top Washer			Removed
S-99-011	(02)	Xylene Cleanup			Removed
C-91-195	04 (04)	Cleaning	04 (04)	Cleaning	N/C*
C-91-195	08 (08)	Carburetor	08 (08)	Carburetor	N/C*
C-91-195	10 (10)	Camshaft (CAM) Gear Washing	10 (10)	CAM Gear Washing	N/C*
S-99-010	37 (1)	Die Cast Machines (12)	E02 (S02) 37 (1)	Die Cast Machines (15)	New. Three (3) new die cast machines requested June 18, 2007.
S-99-011	48 (1)	Pallet Washer	48 (1)	Pallet Washer	N/C*
S-99-011	49 (1)	Engine Wipe - Prepaint	49 (1)	Engine Wipe - Prepaint	N/C*
C-91-195	03 (03)	Cleaning-coating	03 (03)	Cleaning-coating	N/C*
C-91-195	09 (09)	Carburetor Washing	09 (09)	Carburetor Washing	N/C*
C-91-195	36 (36)	Grinder	36 (36)	Grinder	N/C*
S-99-011	45 (1)	#2 Valve Grinding	45 (1)	#2 Valve Grinding	N/C*
C-91-195	33 (33)	Tank Bottom Washer	33 (33)	Tank Bottom Washer	N/C*
C-91-195	2 (02)	Parts Cleaning	2 (02)	Parts Cleaning	N/C*
			(51)	Aluminum Flywheel Washer	New: Requested June 18, 2007
			(52)	Cast Iron Flywheel Washer	New: Requested June 18, 2007

*N/C - No Change

Type of control and efficiency:

All equipment listed in the permit under emission point E06, Paint Booths, is equipped with Paper Filters for Particulate Control – 90% efficiency. Paint Transfer Efficiency: 85%.

Emission factors and their source:

Boilers B01 and emission point E03: AP-42 Table 1.4-1. Emission point E04: EPA Tanks 4.09 Program. Emission point E05: EPA Document 450/4-90-003* and stack tests. Emission point E06: MSDS and material balance (i.e., the VOC and organic HAP emissions from painting operations are calculated as if 100% would be emitted, and assumes all such emissions occur at the spray stations or paint rooms where applied). Emission point E07: EPA Document 450/4-90-003* and stack tests. Stack tests for E05 and E07 were performed at a Briggs & Stratton plant at a different location. In order to validate these emission factors, the Division has determined that a one time test shall be completed within 180 days of issuance of this permit No. F-06-074.

*AIRS Facility Subsystem Source Classification Codes And Emission Factor Listing For Criteria Pollutants, EPA-450/4-90-003, U. S. Environmental Protection Agency, Research Triangle Park, NC, March 1990.

Applicable regulation:

401 KAR 59:010, *New Process Operations*, applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975. The requirements of this rule are included in the permit for the following emission units: E01 and E06.

401 KAR 59:015, *New Indirect Heat Exchangers*, applicable to affected facilities with a capacity of 250 million Btu/hr heat input or less and constructed after April 9, 1972 with respect to particulate emissions and sulfur emissions. This rule applies to the two boilers (B01).

Nonapplicable regulations:

401 KAR 59:225, *New Miscellaneous Metal Parts and Products Surface Coating Operations*, applies to each facility commenced on or after February 4, 1981 which is part of a major source and is located in a county or portion of a county designated attainment or marginal nonattainment for ozone in 401 KAR 51:010. This rule does not apply to emission point E06, Paint Booths, since this is not a major source.

401 KAR 63:002, Section 3, incorporating by reference 40 CFR 63, Subpart RRR, *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*. The requirements of this rule do not apply to this facility, including the aluminum remelt furnaces, emission point E01, since the source melts only clean charge, customer returns or internal scrap and does not operate a sweat furnace, thermal chip dryer or scrap dryer/delacquering kiln/decoating kiln. Therefore, this source is not a *secondary aluminum production facility*, as defined at 40 CFR 63.1503.

401 KAR 60:005, which incorporates by reference 40 CFR 60, Subpart Dc, *Standards of Performance for Small Industrial-institutional Steam Generating Units*, applies to units less than or equal to 100 MMBtu/hr but greater than or equal to 10 mmBtu/hr commenced after June 9, 1989. This rule is not applicable to the 14.65 MMBtu/hr backup boiler (B01), since the unit was constructed prior to June 9, 1989.

EMISSION AND OPERATING CAPS DESCRIPTION:

- a. To preclude the applicability of 401 KAR 52:020, *Title V Permits*, the total annual source-wide emissions shall not exceed the following limitations on a twelve (12) consecutive month basis:
 - i. Volatile organic compound (VOC) shall not exceed 90 tons each per twelve (12) consecutive month basis.
 - ii. Carbon monoxide (CO) emissions shall not exceed 90 tons each per twelve (12) consecutive month basis.
- b. Emission points E01 and E06 PM visible and mass emissions:

- i. 401 KAR 59:010, Section 3(1) limits visible emissions from each unit to less than 20% opacity.
 - ii. 401 KAR 59:010, Section 3(2) limits emissions of particulate matter from each unit to a maximum value that is calculated as $E = 3.59 \times P^{0.62}$, where E is the allowable emissions rate in lbs per hour and P is the aluminum ingot processing rate in tons per hour. For processing rates of 1000 lbs/hr or less, the allowable emission rate is 2.34 lbs/hr.
- c. Pursuant to 401 KAR 59:015, Section 4(1), emissions of particulate matter (PM) from the combustion of natural gas shall not exceed 0.48 lb/MMBtu actual heat input, based on a three-hour average for emission point **B01 (S07)**.
 - d. Pursuant to 401 KAR 59:015, Section 5(1), sulfur dioxide (SO₂) emissions shall not exceed 2.31 lb/MMBtu actual heat input, based on a 24-hour average for emission point **B01 (S07)**.

PERIODIC MONITORING:

- a. The permittee shall monitor monthly raw material usages as specified in the permit to demonstrate compliance with all requirements of this permit, including the source-wide emission and operating cap limitations.
- b. The permittee shall perform a qualitative visible observation of the opacity of emissions from each stack on a weekly basis and maintain a log of the observation. If visible emissions from a stack are seen, then the opacity shall be determined by EPA Reference Method 9 and an inspection shall be initiated for any necessary repairs. The opacity observed shall be recorded in the log.
- c. Particulate filters for emission point E06 shall be visually inspected once per shift.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.